

We claim:

1. A method of making a hydrophilic carbon fiber construction comprising the steps of:

a) immersing a carbon fiber construction in an aqueous dispersion of a metal oxide selected from Type I or Type II, wherein Type I consists of metal oxides having a negative zeta potential and Type II consists of metal oxides having a positive zeta potential;

b) contacting said dispersion with a counterelectrode; and

c) electrophoretically depositing said metal oxide on said carbon fiber construction by applying electric current between said carbon fiber construction and said counterelectrode,

wherein, when said metal oxide is selected from Type I said carbon fiber construction is the anode and when said metal oxide is selected from Type II said carbon fiber construction is the cathode.

2. The method according to claim 1 wherein said metal oxide is selected from Type I and said carbon fiber construction is the anode.

3. The method according to claim 1 wherein said metal oxide is selected from Type II and said carbon fiber construction is the cathode.

4. The method according to claim 1 wherein said metal oxide is selected from the group consisting of SnO_2 , SiO_2 , and ZrO_2 .

5. The method according to claim 1 wherein said metal oxide is selected from the group consisting of SiO_2 , and ZrO_2 .

6. The method according to claim 1 wherein said metal oxide is ZrO_2 .

7. The method according to claim 1 wherein said carbon fiber construction is a woven carbon fiber construction.

8. The method according to claim 1 wherein said carbon fiber construction is a non-woven carbon fiber construction.

5 9. The method according to claim 1 wherein said step of electrophoretically depositing said metal oxide has a duration of not more than 30 minutes.

10 10. The method according to claim 1 wherein said hydrophilic carbon fiber construction is capable of wicking 200mg of water per 40mg of said hydrophilic carbon fiber construction.

11. The method according to claim 1 wherein said hydrophilic carbon fiber construction is capable of wicking 250mg of water per 40mg of said hydrophilic carbon fiber construction.

15 12. The hydrophilic carbon fiber construction made according to the method of claim 1.

20 13. A hydrophilic carbon fiber construction which is capable of wicking 200mg of water per 40mg of said hydrophilic carbon fiber construction in 60 seconds or less.

14. A hydrophilic carbon fiber construction which is capable of wicking 250mg of water per 40mg of said hydrophilic carbon fiber construction in 60 seconds or less.

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